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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/711,679

09/30/2004

Chu-Chi Ting

13838-US-PA

5678

31561

7590

04/06/2006

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE

7 FLOOR-1, NO. 100

ROOSEVELT ROAD, SECTION 2

TAIPEI, 100

TAIWAN

EXAMINER

TSIDULKO, MARK

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/711,679

Applicant(s)

TING, CHU-CHI

Examiner

Mark Tsidulko

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu et al. (US 2002/0070681).

Referring to Claims 1-3 Shimizu et al. disclose (Fig.1) a white LED device including a first LED die [11] emitting blue color light, a second LED die [12] emitting red color light, a phosphor layer [13] disposed on the dies, an electrode connection structure [14] having pins [14b] and [14c] electrically connected with the electrodes [15] of the dies and a light mixing structure created by the phosphor layer [13] and an encapsulant [16].

Referring to Claim 6 Shimizu et al. disclose (Fig.1) a white LED device including a first electrode frame [14a] and a second electrode frames [14b] and [14c].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 4, 5, 7, 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (US 2002/0070681) in view of Suenaga (US 2004/0120155).

Referring to Claim 4 Shimizu et al. disclose the instant claimed invention except for packaging substrate having groove and pins.

Suenaga discloses (Figs.8, 13) an LED device including a packaging substrate [5] having a groove [9], a LED [1], a transparent layer [8] (Fig.8) that fills the groove, and pins [2] (Fig.13) connected with the electrodes [4] of the LED and providing power supply for the LED.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the LED device of Shimizu et al. with the packaging layer and pins, as taught by Suenaga, in order to obtain the power supply structure for the LEDs.

Referring to Claims 5, 7, 8, while Shimizu et al. disclose that the encapsulant [16] is made of transparent resin (page 4, [0066]), it will of course be understood for those skilled in the art, that the substitution of the resin for a glass will not change the functionality of the device.

Shimizu et al. disclose the instant claimed invention except for a transparent resin in the groove.

Suenaga discloses this limitation (page 3, [0054]). Filling the groove with the resin prevents the chip from the damage.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the encapsulant of the device of Shimizu et al., made of glass, as the alternative material, and package the device of Shimizu et al. in the groove of the packaging layer filled with the transparent resin, as taught by Suenaga, in order to prevent the damage of the LED.

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Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (US 2002/0070681) in view of Chang et al. (TW 546854).

Shimizu et al. disclose the instant claimed invention except for a combination of blue die, green die and red phosphor.

Chang et al. disclose a white light-emitting device including a blue die, a green die and a red phosphor.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Shimizu et al. having a combination of blue die, green die and red phosphor, as taught by Chang et al., as an alternative combination, for obtaining a white light emitting device.

Referring to Claims 10-12 Shimizu et al. disclose the instant claimed invention except for that the red phosphor covers a blue die only, green die only or both, blue and green dies.

Chang et al. disclose a white light-emitting device including a blue die, a green die and a red phosphor, but do not disclose that the phosphor covers only one of the plurality of dies.

It is known in the art, that colored light emitted from the LED is absorbed by the phosphor, but stimulates the phosphor to emit its own color light (red in this case). It is also well known in the art, that combination of blue, red and green colors creates the white light. Therefore, it is understood that any die, blue, green, or both can be covered with the phosphor for the purpose of stimulating the red phosphor to emit red light, in order to obtain the white light after mixing of three colors.

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It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the red phosphor of Chang et al., covering the dies of the device of Shimizu et al. in any alternative combinations, in order to obtain a white light illumination.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. and Suenaga, as applied to claim 1 above, and further in view of Wang et al. (US 2006/0028122).

Shimizu et al. and Suenaga disclose the instant claimed invention except for the composition of the red phosphor.

Wang et al. disclose the red phosphor selected from the group consisting of CaS:Eu^{2+} , SrS:Eu^{2+} (page 3, [0034]).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Shimizu et al. and Suenaga with the red phosphor of Wang et al., in order to obtain white color illumination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Tsidulko whose telephone number is (571)272-2384. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the

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organization where this application or proceeding is assigned is (571) 273-8300 for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.T.
March 29, 2006


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800